REMARKS

INTRODUCTION

Claims 1-13 stand rejected. No claims have been cancelled or allowed. Claims 1-3, and 5-13 have been amended. Claims 14-17 have been added. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1-17 are pending and under consideration.

ENTRY OF AMENDMENT UNDER 37 C.F.R. §1.116

Applicant requests entry of this Rule 116 Response because:

(a)   the amendments were not earlier presented because the Applicant believed in good faith that the cited prior art did not disclose the present invention as previously claimed;

(b)   as discussed below, the amendments of claims 1, 5, and 8-13 should not entail any further search by the Examiner since no new features are being added or no new issues are being raised; and

(c)   as also discussed below, the amendments do not significantly alter the scope of the claims and place the application at least into a better form for purposes of appeal. No new features or new issues are being raised.

The Manual of Patent Examining Procedures sets forth in § 714.12 that "any amendment that would place the case either in condition for allowance or in better form for appeal may be entered." Moreover, § 714.13 sets forth that "the Proposed Amendment should be given sufficient consideration to determine whether the claims are in condition for allowance and/or whether the issues on appeal are simplified." The Manual of Patent Examining Procedures further articulates that the reason for any non-entry should be explained expressly in an Advisory Action.

REJECTIONS UNDER 35 USC § 102

Claims 1-12 were rejected under § 102 as anticipated by Prakriya. Claim 13 was rejected under § 102 as anticipated by Selfridge.

Claims 1-12

Response to Previous Argument and Withdrawal of Finality Requested

The Examiner failed to respond to arguments presented in the previous Amendment. It is respectfully noted that: Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it. MPEP § 707.07(f). In the previous Amendment, it was argued that Prakriya does not edit or insert nodes into a graph that is currently being displayed. The argument is again presented below. The Examiner is requested to provide a required response.

Because the Examiner did not provide a required response to the previously submitted argument, and because the prior art does not teach or suggest editing a displayed graph, the Office Action was prematurely made Final. Pursuant to MPEP § 706.07(d), the Examiner is respectfully requested to withdraw the finality of the Office Action.

Insertion Into Graph That Is Currently Being Displayed

Claim 1, before amendment, recited "*displaying a graphic* including a first object and a second object which are connected with each other using a first connector", and "when a third object is located in a predetermined position in relation to the first connector, creating a second connector for connecting the first object and the third object and a third connector for connecting the third object and the second object". In other words, claim 1 recites displaying a graph, and inserting a new object into the displayed graph. Claim 1 and the other independent claims have been amended to clarify this previously recited feature.

In contrast, Prakriya does not relate to or discuss inserting a new node among nodes already displayed on a display screen (claim 1, for example, recites "displaying a graphic"). Rather, Prakriya is directed to positioning a plurality of undisplayed nodes with reference to pre-existing and unmodified items and their relations. There is no graphic display until all nodes have been finally positioned. Figure 2 of Prakriya clearly shows that there is no output, graphic or otherwise, until after the graph is completely generated. The only mention of displaying a graph in Prakriya is at col. 6, lines 15-29, which notes that "The rectilinear layout system 200 shown in an exemplary embodiment in FIG. 2, obtains the information from a data base schema 201 and manipulates nodes that represent data base records and connectors that represent the relationships between the data base records to create diagrams for output on a display device 202 such as monitor 47." The records and connectors used to create the diagram are not

displayed, and the graph is displayed only **after** the graph diagram has been completely created (edited). Withdrawal of the rejection of claim 1 is respectfully requested.

Claims 5, 10, and 12 recite "the first object, second object, and first connector are all displayed on a display screen", where the first connector is selected "after the first object, second object, and first connector have been displayed." Claim 8 recites "the first object, the plurality of second objects, and the plurality of first connectors are all displayed on a display screen", and one or more of the plurality of first connectors are selected after the first object, the plurality of second objects, and the plurality of first connectors have been displayed". Claims 9 and 11 recite "the first object, second object, and first connector are all displayed on a display screen", and a third object is placed in a predetermined position "after the first object, second object, and first connecter have been displayed".

Withdrawal of the rejection of claims 1, 5, and 8-12 is respectfully requested.

Interactive/GUI

Claim 1 recites "an interactive graphical editing unit", with which "a third object is interactively placed in a predetermined position in relation to the first connector". The Microsoft Dictionary of Computing defines "interactive" as meaning "as when a user enters a question or command and the system immediately responds." The same dictionary also defines "interactive graphics" as "A form of user interface in which the user can change and control graphic displays, often with the help of a pointing device." The Free Online Dictionary of Computing defines "interactive" as meaning:

> <programming> A term describing a program whose input and
> output are interleaved, like a conversation, allowing the user's
> input to depend on earlier output from the same run. The
> interaction with the user is usually conducted through either a text-
> based interface or a graphical user interface. Other kinds of
> interface, e.g. using speech recognition and/or speech synthesis,
> are also possible. This is in contrast to batch processing where all
> the input is prepared before the program runs and so cannot
> depend on the program's output.

Prakriya discusses a batch processing type of graph layout system that algorithmically lays out (edits) a graph. The layout processing (editing) is all automatic (not interactive) and is explicitly for the purpose of avoiding interactive manual layout. This is different than the present invention's claims, which recite interactive graphical editing (e.g. selecting or placing). The

9

claims have been amended only to clarify what was previously recited in the claims; "interactively placed", and "interactively selected". The claims also previously recited, for example, "when a third object is located", where "located" is an action as, for example, "placed," "positioned," "arranged", etc. Furthermore, various of the claims recited an "editing unit". The present specification mentions drawing programs in the Background. Generally, drawing and editing programs are interactive. Therefore, the "interactive" amendment only clarifies the previous meaning of the claims.

Claim 5 recites "an interactive graphical editing unit, when the first connector is interactively selected". Claim 8 recites "an interactive graphical editing unit, when one or more of the plurality of first connectors are interactively selected". Claims 9 and 11 recite "a third object is interactively placed in a predetermined position". Claim 10 recites "the first connector is interactively selected". Claim 12 recites "the first connector is interactively selected".

Withdrawal of the rejection of claims 1, 5, and 8-12 is further respectfully requested.

<u>Claim 13</u>

Claim 13 was rejected as anticipated by Selfridge. Claim 13 is distinguishable at least because Selfridge only discusses adding nodes to the edge (exterior) of a graph. Claim 13 recites "inserting the insertion node into the graph by creating a second displayed connection connecting the insertion node to the first node, and by creating a third displayed connection connecting the insertion node to the second node". In other words, an insertion node is inserted between existing nodes by connecting it to both the first displayed node and the second displayed node. In contrast, Selfridge discuses only connecting a new node to a single other node.

The cited portion of Selfridge states that "Once the data analyst has defined a new node, the new node is added to the graph *as a child of the current node* and itself becomes the new current node" (col. 6, lines 3-5). Adding a child node to only one existing node is a completely different operation from inserting a node between two existing nodes. Adding a node to the edge of a graph does not require the reconnection of nodes that defines node insertion. Selfridge does not discuss connecting the node to a node formerly connected to the parent node ("first node"). Furthermore, it is a property of graphs that multiple child nodes may be connected to a single parent node. Therefore, as in Selfridge, merely adding a new node as a child of an existing parent node in no way implies or requires connecting (e.g. "third displayed connection")

10

the new node to a former child of the parent node (e.g. "second node"); Selfridge adds a new node simply by making a new connection to the node. Figure 8 of Selfridge shows that newly added nodes 823 and 811 are each connected to only a single parent node. In sum, claim 13 recites inserting a node between nodes, in contrast, Selfridge discusses the lesser operation of adding (appending) a new node to an edge node without altering existing node relations.

Withdrawal of the rejection of claim 13 is respectfully requested.

<u>New Claims 14-17</u>

Claim 14, based on claim 1, recites another aspect of inserting a node into a graph after it has been displayed. In particular, claim 14 reflects the change in the underlying graph data ("where the second and third connectors reflect the third object being newly related to the first and second objects"). The prior art does not recited this feature.

Claim 15 uniquely recites, for example, "interacting with a graphical user interface to manually insert a new node between edge-connected nodes of a displayed graph; and responsive to interactively inserting the new node, automatically displaying new lines in the graph and automatically undisplaying a line from the graph, where the displaying and undisplaying reflects changes to edges of the graph caused by the interactive inserting." The prior art does not recite this feature, and in particular, undisplaying a line.

Claims 16 and 17 recite aspects of the present invention not found in the prior art. For example, claim 16 recites "after said displaying, *interactively selecting* the first displayed line; and in response to said interactive selecting: undisplaying the selected first line, displaying a new node corresponding to the new node data, adding to the graph data structure new relationship data that relates the new node data to the first node data and the second node data, displaying a new first line and new second line portraying the new relationship data and graphically connecting the new graphical node to the first and second graphical nodes."

DEPENDENT CLAIMS

Dependent claims 4, 6, and 7 have been amended to conform with the clarifying amendments of their parent claims. Claim 6 has also been amended to recite stopping display of the first connector, which is not taught by the prior art. The dependent claims are deemed patentable due at least to their dependence from allowable independent claims. These claims are also patentable due to their recitation of independently distinguishing features. For example,

11

claim 2 recites "when the first connector and the third object overlap each other, said interactive graphical editing unit automatically creates and displays the second and third connectors". This feature is not taught or suggested by the prior art. Withdrawal of the rejection of the dependent claims is respectfully requested.

If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please AMEND the following claims:

1.   (ONCE AMENDED) A graphic editing apparatus, comprising:

a display unit displaying a graphic including a first object and a second object which are connected with each other using a first connector, where the first object, second object, and first connector are all displayed on a display screen; and

an interactive graphical editing unit, when a third object is interactively [located] placed in a predetermined position in relation to the first connector after the first object, second object, and first connector have been displayed, automatically creating and displaying a second connector for connecting the displayed first object and the third object and a third connector for connecting the displayed third object and the second object.

2.   (ONCE AMENDED) The graphic editing apparatus according to claim 1, wherein when the first connector and the third object overlap each other, said interactive graphical editing unit automatically creates and displays the second and third connectors.

3.   (ONCE AMENDED) The graphic editing apparatus according to claim 1, further comprising:

a judgment unit judging automatically whether a distance between the first object and the second object is sufficient to accommodate the third object between them; and

a shift unit, if the distance is not sufficient, automatically shifting at least one of the first and second objects.

4.   (AS UNAMENDED) The graphic editing apparatus according to claim 1, further comprising a management unit managing a subordinate relationship between objects, and

the management unit, if the second object is subordinated to the first object before the third object is inserted between the first object and the second object, subordinating the third object to the first object and subordinating the second object to the third object.

5.   (ONCE AMENDED) A graphic editing apparatus, comprising:

13

a display unit displaying a graphic including a first object and a second object which are connected with each other using a first connector, where the first object, second object, and first connector are all displayed on a display screen; and

an interactive graphical editing unit, when the first connector is interactively selected after the first object, second object, and first connector have been displayed, automatically creating and displaying a second connector for connecting the displayed first object and the third object and a third connector for connecting the displayed third object and the second object.

6.   (ONCE AMENDED) The graphic editing apparatus according to claim 5, wherein said interactive editing unit automatically shifts the displayed second object, [and] displays the third object in a position where the second object was displayed before the first connector is interactively selected, and stops displaying the first connector.

7.   (ONCE AMENDED) The graphic editing apparatus according to claim 5, further comprising a coordinate system providing unit providing a virtual coordinate system defining boxes, in which each box is defined as area for displaying one object, wherein

said display unit displays each object using the virtual coordinate system, and said interactive editing unit locates each object using the virtual coordinate system.

8.   (ONCE AMENDED) A graphic editing apparatus, comprising:

a display unit displaying a first object, a plurality of second objects and a plurality of first connectors for connecting the first object and the plurality of second objects, where the first object, the plurality of second objects, and the plurality of first connectors are all displayed on a display screen; and

an interactive graphical editing unit, when one or more of the plurality of first connectors are interactively selected after the first object, the plurality of second objects, and the plurality of first connectors have been displayed, automatically creating and displaying a second connector for connecting the displayed first object and the third object, and one or more third connectors for connecting one or more of the displayed second objects connected to the interactively selected first connector and the third object.

9.   (ONCE AMENDED) A graphic editing method, comprising:

displaying a graphic including a first object and a second object which are connected

14

with each other using a first connector, where the first object, second object, and first connector are all displayed on a display screen; and

when a third object is interactively placed [located] in a predetermined position in relation to the first connector after the first object, second object, and first connecter have been displayed, automatically creating and displaying a second connector for connecting the displayed first object and the third object and a third connector for connecting the third object and the second object.

10. (ONCE AMENDED) A graphic editing method:

displaying a graphic including a first object and a second object which are connected with each other using a first connector, where the first object, the second object, and the first connector are all displayed on a display screen; and

after the first object, second object, and first connecter have been displayed and when the first connector is interactively selected, automatically creating and displaying a second connector for connecting the first object and the third object and a third connector for connecting the third object and the second object.

11. (ONCE AMENDED) A storage medium on which a program enabling a computer to execute a process is stored, the process comprising:

displaying a graphic including a first object and a second object which are connected with each other using a first connector, where the first object, the second object, and the first connector are all displayed on a display screen; and

after the first object, second object, and first connecter have been displayed and when a third object is interactively placed [located] in a predetermined position in relation to the first connector, creating and displaying a second connector for connecting the displayed first object and the third object and a third connector for connecting the third object and the second object.

12. (ONCE AMENDED) A storage medium on which a program enabling a computer to execute a process is stored, the process comprising:

displaying a graphic including a first object and a second object which are connected with each other using a first connector, where the first object, the second object, and the first connector are all displayed on a display screen; and

after the first object, second object, and first connecter have been displayed and when

the first connector is <u>interactively</u> selected, <u>automatically</u> creating <u>and displaying</u> a second connector for connecting the <u>displayed</u> first object and the third object and a third connector for connecting the <u>displayed</u> third object and the second object.

13.   (ONCE AMENDED) A method of <u>interactively graphically</u> inserting a node into a displayed graph <u>comprising displayed nodes and connectors graphically connecting the nodes,</u> <u>said method</u> comprising:

interactively determining a <u>displayed</u> first connection in the <u>displayed</u> graph by comparing a position of the first connection with a position of an <u>object being moved by the</u> input device, where the <u>displayed</u> first connection connects a first displayed node and a second displayed node <u>of the displayed graph</u>; and

<u>responsive to said interactive determining, automatically displaying and</u> inserting the insertion node into the graph by <u>automatically</u> creating <u>and displaying</u> a second connection connecting the insertion node to the <u>displayed</u> first node, and by <u>automatically</u> creating <u>and</u> <u>displaying</u> a third connection connecting the insertion node to the <u>displayed</u> second node.

14.   (NEW) A graphic editing apparatus, comprising:

a display unit displaying a first object, a second object, and a first connector, the objects being graphically connected with each other by the first connector; and

an editing unit, responsive to a displayed third object being interactively located in a predetermined position in relation to the first connector, creating for display a second connector graphically connecting the displayed first object and the displayed third object, and creating a third connector graphically connecting the third object and the second object, where the second and third connectors reflect the third object being newly related to the first and second objects.

15.   (NEW) A method, comprising:

interacting with a graphical user interface to insert a new node between edge-connected nodes of a displayed graph; and

responsive to interactively inserting the new node, automatically displaying new lines in the graph and automatically undisplaying a line from the graph, where the displaying and undisplaying reflects changes to edges of the graph caused by the interactive inserting.

16.   (NEW) A method, comprising:

storing a graph data structure comprising first node data, second node data, and first relationship data logically relating the first node data to the second node data;

displaying first and second graphical nodes portraying the first node data and the second node data, and displaying a first graphical line portraying the first relationship data by graphically connecting the first and second graphical nodes;

after said displaying, adding new node data to the graph data structure;

after said displaying, interactively selecting the first displayed line; and

in response to said interactive selecting: undisplaying the selected first line, displaying a new node corresponding to the new node data, adding to the graph data structure new relationship data that relates the new node data to the first node data and the second node data, displaying a new first line and a new second line portraying the new relationship data and graphically connecting the new graphical node to the first and second graphical nodes.

17.   (NEW) A method, comprising:

storing a graph data structure comprising a set of node variables and information logically interrelating the node variables;

displaying, with a graphical user interface (GUI), graphical nodes and graphical lines graphically connecting the graphical nodes, where the graphical nodes correspond to the node variables, and where the graphical lines correspond to the information logically relating the node variables;

after said displaying and storing, adding a new node variable to the set of node variables, where the new node variable is unrelated to any other variables in the set;

interacting with the GUI to select a first graphical line from among the displayed graphical lines, where the selected first graphical line graphically connects a first and second of the displayed graphical nodes, where a first node variable from the set of node variables corresponds to the displayed first graphical node, where a second node variable from the set of variables corresponds to the displayed second graphical node, and where the displayed first graphical line represents some of the relating information that logically relates the first and second node variable; and

responsive to selecting the first graphical line, altering the logical relating information to logically unrelate the first and second node variables, causing the selected first line to be undisplayed, newly displaying a third graphical node corresponding to the new node variable, logically relating the new variable to first and second variables of the set of variables, newly

17

displaying a first graphical line connecting the newly displayed third graphical node with the first graphical node, and newly displaying a second graphical line connecting the newly displayed third graphical node with the second graphical node.